

marking of the antennæ (*Zool. Jahrb.* xxxvii. p. 257, fig. α , 1914) renders this species very conspicuous.

Ischnogaster ornatifrons, Cam.

5 ♂♂.

BORNEO: Sarawak, Mt. Matang, xii. 1913; Mt. Merinjak, 1500 ft., v. 1914 (*G. E. Bryant*).

LVIII.—*Descriptions and Records of Bees.*—LXIV.

By T. D. A. COCKERELL, University of Colorado.

Megachile nidulator, Smith.

♀.—Fife Bay, New Guinea, 1899 (Froggatt coll. 217 c).

Megachile doddiana, var. *clarkei*, v. n.

♀.—Hair at sides of first dorsal segment of abdomen entirely black.

Hab. Geraldton, W. Australia, 1914 (*Clarke*; Froggatt coll. 218 c).

The specimen also carries the number 169.

Megachile calens, sp. n.

♀.—Length about 10.5 mm.

Ventral scopa bright red, black on last segment; anterior margin of clypeus with a small median tubercle; wings smoky hyaline, darker apically.

Like *M. diligens*, Sm., from Oahu, Hawaiian Is., but larger, hair of vertex black, mesothorax and scutellum with a considerable admixture of black hair; the bright red abdominal bands extremely thin or interrupted in middle.

♂.—Like *M. doanei*, Ckll., from Tahiti, the sixth abdominal segment strongly bidentate, with a broadly rounded excavation between the teeth; but hair at sides of upper part of face black instead of brown, scutellum with much black hair, second to fourth abdominal segments with short black hair on disc, the first segment with no red hair-band, that on second present only at sides, that on third almost obsolete in middle, fifth segment with black hair in middle, especially basally; sixth segment with longer teeth. Anterior coxæ with slender spines; anterior tarsi slightly

broadened, having lateral, brownish, keel-like outer margins (*doanei* has the same).

Hab. New Hebrides. The female is marked "Epi, W. W. F., 1913, 211 c," the male "E/n, 1913, W. W. F., 213 c." From Froggatt's collection.

Known from *M. jimbriventris*, Fr., by the scopa black only on last segment, the form of end of male abdomen, &c.

In my table in Proc. Linn. Soc. N.S.W. 1911, p. 175, the female *M. calens* runs to 16, but is quite distinct from the two species there given. The male runs to *M. woodfordi*, Ckll., but the structure of the sixth abdominal segment is quite different. Owing to the feebly banded abdomen it could run to *M. mortyana*, D. T., but that differs in the colour of the tarsi. *M. calens* is readily known from *M. similis*, Sm., by the light hair of the face. The male is the type.

Megachile serricauda, Cockerell.

♂.—New Hebrides; "Epi, 1913, W. W. F., 214 c" (Froggatt coll.).

This Australian species has presumably been introduced, perhaps with timber carrying the nests.

Megachile laboriosa, Smith, variety *a*.

♂.—Binaturi R., Papua, March 1913 (Froggatt coll. 215 c).

Smith's description is too brief, but Friese and Meade-Waldo have supplied some additional characters. The species, as I have determined it, is allied to *M. aberrans*, Friese, but has the abdomen beyond the third segment clothed with reddish hair, mixed with fuscous. The size (length about 13.5 mm.) is greater than Smith indicates. The checks have white hair beneath and the sixth abdominal segment has a median keel. The wings are dark fuscous-ferruginous. The coloured figure published by Friese only differs from my specimen in having the apical part of the abdomen a much more lively red. In the list accompanying the specimens the locality is given as "Binitura R."

Megachile aurifrons, Smith.

♀.—Brewarrina, N.S.W., 1914 (Froggatt, 205 c).

Megachile chrysopyga, Smith.

♀.—Geraldton, W. Australia, 1914 (Clarke, 172; Froggatt coll. 209 c).

Megachile cygnorum, Cockerell.

I am now satisfied that I have at different times confused three species under this name, the males of which are readily separable as follows:—

Fifth abdominal segment with light hair, except at extreme base	<i>M. captionis</i> , sp. n.
Fifth abdominal segment with conspicuous erect black hair.....	1.
1. Length about 11 mm.; anterior tibiæ with a broad black band covering at least half of outer surface longitudinally	<i>M. macularis</i> , D. T.
Smaller; anterior tibiæ with a black patch on basal half outside	<i>M. cygnorum</i> , Ckll.

The *M. macularis* is Turner's 623 from Mackay; it certainly must belong with the female from the same locality. The original *macularis* was from Western Australia, but Smith's description appears to point to the species I have identified from Queensland.

Megachile captionis, sp. n.

♂.—Very close to *M. macularis* and *M. cygnorum*, but with the following special characters:—Small, length about 9 mm.; anterior tibiæ bright ferruginous, with a large basal black spot anteriorly, not nearly covering half the surface; second joint of anterior tarsi with a more or less evident black spot visible from without (as in *M. darwiniana*); outer half of tegulæ pale reddish; fifth dorsal abdominal segment with erect white or yellowish-white hair. The vertex has the hair entirely pale, not mainly black as in *darwiniana*. The anterior coxæ have an oblique flattened tooth and a patch of red hair.

♀.—Length about 10 mm.

General appearance of *M. quinquelineata*, the ventral scopa (white, black on last segment and extreme sides of penultimate) and light abdominal bands practically the same, but the mesothorax much more finely punctured and the sixth abdominal segment with a broad band of dense white tomentum. Mandibles quadridentate; clypeus extremely densely punctured, with a minute median apical tubercle; eyes lilac; flagellum red beneath; wings hyaline, short; spurs of hind legs black, but of middle ones red. There are two white hair-spots in the scutello-mesothoracic suture; the mesothorax and scutellum are almost without hair, but

are perhaps denuded; the hair of the vertex is very short and ochraceous.

Hab. Males from Brewarrina, N.S.W., 1914 (*Froggatt*, 206 c = type), and Woodend, Victoria (*French*; *Froggatt* coll. 169), the latter with green eyes, and hair of face, top of head and dorsum of mesothorax strongly yellowish. Female from Brewarrina (*Froggatt*, 210 c). The dense band of hair across sixth abdominal segment readily separates the female from *M. cetera*, Ckll.

Another male *M. captionis*, marked "Yarrowin" (*Froggatt*, 207 c), looks long and narrow, having the abdominal segments extended; it has no spot on the outer side of anterior tarsus, and there is a slight projection in the middle of the interval between the dentiform projections of the sixth abdominal segment. The flagellum is rich chestnut-red beneath. According to the list accompanying the specimens, the "Yarrowin" material is from Brewarrina, which is on the Barwon R., over 360 miles from the coast and about 60 miles from the Queensland border.

Megachile barwonensis, sp. n.

♂.—Length about 6½ mm.

Small and slender, like a *Heriades*; head and thorax black, densely punctured; abdomen clear bright ferruginous, the first segment with the basin (except upper part) and cloud on each extreme side black; wings hyaline; face covered with white hair.

Closely allied in every way to *M. micrerythra*, Ckll., but differing as follows:—Tarsi only red apically; no white spots in scutello-mesothoracic suture (but a white hair-spot at each corner of mesothorax, the posterior ones conspicuous); sixth abdominal segment bidentate, the short tubercle-like teeth wide apart. The head is large, broader than the thorax. Flagellum slender, dull red beneath.

Hab. Yarrowin, N.S.W., 1914 (*Froggatt*, 223 c).

The name is derived from the Barwon R.

Thaumatoma callurum, sp. n.

♂.—Length about 5.5 mm.

Black, with the last three abdominal segments entirely bright clear ferruginous; head and thorax closely punctured, but shining; head large; face with much pure white hair; flagellum pale ochreous, slender throughout, except the large, flattened, spatulate, black apex; legs dark; wings hyaline, stigma pallid; abdomen strongly constricted above

between the segments; first ventral segment only slightly turgid; sixth segment bidentate, the teeth rather close together.

♀.—Length about 7 mm.

Fifth and sixth abdominal segments red, but not so bright as in the male; ventral scopa white; white hair-spots at corners of mesothorax, but none in scutello-mesothoracic suture; head large; flagellum quite normal for *Megachile*, obscure red beneath; clypeus strongly punctured, its lower margin tridentate; supraclypeal area with large punctures and a smooth area.

Hab. Yarrowin (Brewarrina), 1914 (*Froggatt*; ♂ = type, 226 c; ♀ 230 c).

Easily known by its small size and partly red abdomen. The female is very like *Megachile fultoni*, Ckll., but that has only one red abdominal segment, and the clypeus and supraclypeal area are quite different. The genus *Thaumatosome* is founded on a secondary sexual character, and the female cannot be distinguished from the group of Australian *Heriades*-like *Megachile*, which, however, should probably be separated from true *Megachile*.

Saropoda bombiformis, Smith.

♀.—Binaturi R., Papua, March 1913 (*S. H. M.*; *Froggatt* coll. 216 c). Agrees with Australian specimens.

Anthophora preissi froggatti, subsp. n.

♀.—Length fully 16 mm.

Covered with mouse-coloured hair. Differs from *A. preissi* (from Western Australia) as follows:—Antennæ black, the flagellum not red beneath; a transverse pale yellow supraclypeal band, and the lower corners of the clypeus broadly pale yellow; median pale stripe on clypeus narrow, not tapering above, but broadened at extreme upper end; hind margins of abdominal segments narrowly dark reddish; the creamy-white hair of outer side of hind tibia with a ferruginous stain at base.

Hab. Brewarrina, New South Wales, 1914 (*Froggatt*, 203 c).

At the same locality Mr. Froggatt took a male *A. pulchra*, Sm. (204 c).

Anthophora chlorocyanea, sp. n.

Anthophora cingulata, Ckll. Ann. & Mag. Nat. Hist., Oct. 1905, pp. 394, 397.

Mr. Meade-Waldo has shown that the real *A. cingulata* of Fabricius is *emendata*, Sm.

Lithurgus albofimbriatus froggatti, subsp. n.

♀.—Abdomen apparently bandless, the thin hair-bands on hind margin of segments being dark fuscous; sixth segment dorsally with a rather conspicuous patch of dark red hair; tuft of hair behind hind wings dark fuscous; median keel of clypeus very prominent.

Hab. New Hebrides; "Epi, 1913, W. W. F." (Froggatt coll. 212 c).

It is rather illogical to call this isolated form a subspecies rather than a species, but its characters are slight.

Pachyprosopis holoxanthopus, sp. n.

♂.—Length about 4.25 mm.

Robust; head formed as in *Euryglossa*, broad but not exceptionally large, black, very faintly metallic, with the whole face up to level of antennæ, and slender inconspicuous lines up anterior orbital margins, as well as the labrum and mandibles, and spot on lower part of cheeks next to base of mandibles, all bright chrome-yellow; antennæ only moderately long, entirely bright yellow; front finely but distinctly punctured; thorax black, the mesothorax and scutellum obscurely purplish, irregularly and inconspicuously punctured; tegulæ pale testaceous. Wings hyaline, stigma amber-colour, second s.m. high and narrow. Legs entirely bright chrome-yellow. Abdomen broad, with the basal half bright clear ferruginous, the apical half black or nearly, with a faint metallic tint, the apical segment dark reddish brown.

Hab. Yarrowin (Brewarrina), 1914 (Froggatt, 231 c).

Easily known from all other species by the bright red basal half of abdomen, with yellow legs and antennæ.

Euryglossa semirufa, sp. n.

♀.—Length about 5 mm.

Robust, thick-set, with hardly any pubescence; head and

thorax black, closely and very finely punctured; clypeus (except a black band down each side), subcuneiform lateral marks (ending abruptly above at level of antennæ), and large hat-shaped supraclypeal mark (notched above) pale reddish yellow, the lower part of clypeus suffused with dull red; mandibles with a large pale yellow basal spot; antennæ short, entirely clear ferruginous; tubercles light reddish yellow; tegulæ clear ferruginous. Wings hyaline, stigma and nervures dull amber-colour; second s.m. nearly square. Legs (except coxæ and trochanters) clear red, much of basal half of hind tibiæ very pale yellow. Abdomen broad and short, dullish, with extremely fine punctures, clear ferruginous without markings, except some black at extreme base of first segment; first segment beneath dark, with a broad expanded hyaline margin.

Hab. Yarrowin (Brewarrina), 1914 (*Froggatt*, 222 c).

Distinct from all others by the black head and thorax, with clear red abdomen. The clypeus is not depressed in the middle as it is in *E. albocuneata*, Ckll., which is similar in general form, but very different in markings.

Euryglossa rhodochlora, sp. n.

♀.—Length about 9 mm.

A species of the *rubricata* group; head dark bluish green, the clypeus, supraclypeal area, labrum, and mandibles black; clypeus shining, sparsely but distinctly punctured, with a strong median longitudinal depression; scape black; flagellum dark brown above, light ferruginous beneath; mesothorax and scutellum shining, sparsely punctured; mesothorax red, blackened anteriorly, especially at sides; scutellum and postscutellum black, rest of thorax dark blue-green; pleura dullish, metathorax shining; tubercles densely fringed with white hair; tegulæ pale testaceous. Wings clear, nervures and stigma dusky reddish; second s.m. much broader (longer) than high; third discoidal cell produced at end. Legs black, the knees reddish, the basitarsi dark fuscous, the small tarsal joints dull ferruginous. Abdomen with a sericeous surface, red, first segment dark blue-green except narrow apical margin, second with a transverse blue-green suffusion across disc, third more or less metallic subapically and fourth at sides, fifth and apex blue-green; venter dark, with more or less red at bases of segments.

Hab. Yarrowin (Brewarrina), 1914 (*Froggatt*, 228 c).

Readily known from the other members of the *rubricata* group by the dark legs and scutellum, &c.

Euprosopis elegans sydneyana (Ckll.).

3 ♂, Yarrowin (Brewarrina), 1914 (*Froggatt*, 232 c).

Prosopis sublateralis, sp. n.

♂.—Length about $4\frac{1}{2}$ mm.

Head black, with the mandibles, labrum, clypeus, supra-clypeal mark, and large patch of similar form just above and connected with it, and lateral face-marks (filling space between eyes and clypeus and supra-clypeal area, and going upwards as narrowing bands along inner orbits nearly to level of lower edge of middle ocellus) all cream-colour; face narrow; front very finely and closely punctured; antennæ light ferruginous, the short scape cream-coloured in front, the flagellum a little dusky above, joints quite normal; mesothorax, scutellum, axillæ, sides of prothorax, mesopleura, and an obscure patch at sides of metathorax all terra-cotta red; tubercles and two marks on upper border of prothorax creamy-white; other parts of thorax black; mesothorax dull, minutely punctured; area of metathorax semicircular, somewhat shining, irregularly wrinkled, bounded by a beaded sulcus; tegulæ ferruginous, with a white spot. Wings clear, nervures and stigma dark brown. Legs black, with the anterior and middle knees, the anterior tibiæ, the middle tibiæ at apex, hind tibiæ broadly at base and slightly at apex, and all the basitarsi creamy white; middle tibiæ light ferruginous in front; small joints of anterior and middle tarsi pallid, but of hind tarsi fuscous. Abdomen with the first two segments and the base of the third terra-cotta red, the rest black.

Hab. Yarrowin (Brewarrina), 1914 (*Froggatt*, 229 c).

The quite different area of metathorax indicates that this cannot be the male of *P. cenibera*, Ckll. It is evidently very close to *P. lateralis*, Smith, but, considering the entirely different locality and the various differences of size, markings, &c., I feel confident that the two are not sexes of one species.

Prosopis coronatula, sp. n.

♂.—Length about 4 mm.

Head and thorax black; face below antennæ entirely chalk-white, the lateral marks also extending upwards along

orbits, ending in a point at level of middle of front; supra-clypeal mark sometimes notched in middle above, but not tridentate; labrum and mandibles white; antennæ long, light ferruginous, the flagellum somewhat dusky above, the very short scape with a broad white band in front; upper border of prothorax (interrupted in middle) and tubercles white; front and mesothorax finely but distinctly punctured, pleura with coarse punctures on a dull ground; area of metathorax large, triangular, strongly wrinkled, shining; tegulæ with a white spot. Wings hyaline, stigma and nervures dark brown; first r. n. meeting t.-c. Legs marked nearly as in *P. sublateralis*, but most of anterior tibia light ferruginous, middle and hind tibiæ dark fuscous, with base and apex creamy white, all the tarsi pale. Abdomen bright ferruginous, with apex broadly black.

Hab. Brewarrina, 1914 (*Froggatt*, 220 c). Also a co-type, Yarrawin (*Froggatt*, 221 c).

Close to *P. coronata*, but easily separated by the broadly black end of abdomen &c. Also close to *P. constricta*, but clypeus without the lateral black marks, supra-clypeal mark present, &c.

LLIX.—*Second List of Small Mammals from Western Yunnan collected by Mr. F. Kingdon Ward.* By OLD-FIELD THOMAS.

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IN 1912* I published a list of some small mammals collected in the neighbourhood of A-tun-tsi, N.W. Yunnan, by Mr. F. Kingdon Ward; and I am now able to supplement this by giving a list of a second collection made in the same little-known region. Some of the specimens were obtained further westwards towards the Burmese frontier.

The collection has been presented to the National Museum by the Hon. N. Charles Rothschild.

1. *Tupaia belangeri chinensis*, J. And.

♂. Yung-chang-fu, W. Yunnan. 6000'.

* Ann. & Mag. Nat. Hist. (8) ix. p. 513 (1912).